

## EXECUTIVE SUMMARY

November 2, 2006

<b>Mine Name:</b> Beck Street Quarry	<b>I.D. Number:</b> M/035/019
<b>Operator:</b> Staker & Parson Companies	<b>County:</b> Salt Lake
<b>Address:</b> 151 West Vine Street Murray, Utah 84107	<b>New/Existing:</b> New Permit, Existing Mine
	<b>Mineral Ownership:</b> Fee
	<b>Surface Ownership:</b> Fee
<b>Telephone:</b> (801) 262-9738	<b>Lease No.(s):</b>
<b>Contact Person:</b> John Parson	<b>Permit Term:</b> Life of Mine
<b>Telephone:</b> (801) 298-7500	

**Life of Mine:** +50 years

**Legal Description:** Sections 13, 14, 23, 24, T1N, R1W,

**Mineral(s) to be Mined:** Predominantly limestone, some sand and gravel

**Mining Methods:** Open Pit utilizing trucks & loaders

**Acres to be Disturbed:** 334

**Premining Land Use:** Wildlife and grazing, historically the land has been used for mining and aggregate processing.

**Postmining Land Use:** Light Industrial

**Variances from Reclamation Standards (Rule R647) Granted:**

R647-4-111.7 Highwalls: A study completed by IGES documented the ability of the material in the south end of the quarry to stand at an angle greater than 45 degrees. This portion of the quarry has a designed final slope of 58 degrees, which deterministic factors of safety of 1.7 and 2.1 were computed for various methods to assess stability. A variance to this rule is granted only in the area covered by the IGES study.

R647-4-111.13 Revegetation: No revegetation success standard will be applied to the highwall. The operator will seed the benches, but remedial work or measuring for revegetation success would be difficult.

## **Soils and Geology**

**Soil Description:** Deep, well-drained, stratified soils with stone and cobbles comprises the majority of the volume. The range site is classified as Upland Stony Loam.

**pH:** Unknown but expected to be about 7.5-8.0.

**Special Handling Problems:** None.

**Geology Description:** The property is located on a geomorphic feature called the Salt Lake Salient. The feature is the result of the termination of two major faults for the Wasatch Fault Zone. The Warm Springs Fault is one of the segments. The fault brought Paleozoic carbonate rocks to the surface and exposed them on the footwall of the fault where they are presently providing an important resource of rock aggregate. The Paleozoic rocks range from Cambrian to Mississippian in age and contain two major unconformities. Tertiary conglomerate and volcanic rock unconformably overlie the block of Paleozoic aged rock. The Tertiary sedimentary rock and the Paleozoic carbonate rock have been tilted during their tectonic history such that they generally dip to the southeast and strike to the northeast. The mined limestone is derived from the bedded material occurring in the Tertiary conglomerate and Paleozoic carbonate rock. The final sedimentary deposits came during the Quaternary and chiefly in the Pleistocene epoch. The deposits are lacustrine in origin left from Lake Bonneville. The lake deposits consists of layers of silt, sand, and gravel and are generally flat lying.

## **Hydrology**

**Ground Water Description:** The shallow water table is approximately 20-25 feet deep under the pit floor. There are two groundwater springs on the property, Lime Spring in Lime canyon (water rights held by Staker and Parsons Co., Foss Lewis and Sons, and Lakeview Rock Products, Inc.) and a hot spring that appears at the base of the natural slope and flows off the property to the west. Lime Springs is proposed to be mined through during the long term mine plan. There is a well drilled on the property that the company uses occasionally to wash aggregate, it contains high dissolved solids and is not potable water. The hot water comes from the Warm Springs fault. The well water comes from the shallow unconfined aquifer lying above the confined aquifer. Below the mine area along Beck Street is a highly transmissive shallow aquifer in direct connection with the valley. It is very important that any storm water be well contained and not an additional contaminant to the shallow aquifer below the property although this ground water is poor quality.

**Surface Water Description:** Annual rainfall averages between 16 and 25 inches. Initial mining operations intercepted two ephemeral channels that drain the lower western slopes of the Wasatch Mountains: Lime Canyon to the north and Jones Canyon to the south. Both of these watercourses were once tributary to the Jordan River that flows into the Great Salt Lake. Due to extensive development, mining, railroads, highways, and other developments any direct flows to the Jordan River have been eliminated. Up gradient of the property Lime canyon drains 275 acres and Jones canyon drains 310 acres. A hill slope area of about 120 acres is also intercepted by the property. In Lime Canyon there exists a spring draining perched aquifers. All runoff except the spring is ephemeral and what little flow

makes its to the mine floor infiltrates.

**Water Monitoring Plan:** No water monitoring plan is needed since the shallow ground water aquifer is exempt from regulation due to the naturally poor water quality.

## **Ecology**

**Vegetation Type(s); Dominant Species:** Prior to any disturbance, the area was probably a sagebrush/grass community, and the dominant species were probably bluebunch wheatgrass and big sage. Although these and associated species are still present, much of the vegetation now consists of introduced annuals, especially cheatgrass, and native "increaser" species, such as snakeweed. The draws contain species typical of more mesic environments, such as box elder, hackberry, smooth sumac, and Gamble oak.

**Percent Surrounding Vegetative Cover:** Total vegetation cover is about 68 percent of which about half is desirable (including all native) species and about half is undesirable species.

**Wildlife Concerns:** None.

## **Mining and Reclamation Plan Summary:**

**Operations:** Mining at the site is an open face extraction method. In this system, a horizontal and vertical advance is made into the hillside, usually on several elevation levels. The upper level material is either trucked or pushed to subsequent lower levels, until arriving at the process level. A bench and highwall system is developed during mining, starting at the upper most bench. At the conclusion of mining, a series of benches and interim highwalls remain. Depending on the rock type and competency, the overall angle of this series of benches will be 45 to 58 degrees from horizontal. The overall slope angle of the majority of the quarry will be 45 degrees transitioning to 58 degrees only in the southern portion.

Processing consists of transporting the broken rock by front end loader or mine trucks to the hopper feeding the aggregate production circuit. The crushed screened circuit products are conveyed to stockpiles. Products from this system are aggregate base course (-4"), coarse aggregate rock (-2"), washed rock (-2"), washed sand (-1/2"), and #4 asphalt aggregate fines (-1/2").

**Reclamation:** Salt Lake City Corporation has zoned the area of the mine to transition from a landuse of extractive industries to light industrial or a business park. All access roads utilized during production will be within the final pit limit, and eliminated as production progresses. No access roads will remain that require reclamation. At the close of mining, a setback area of 100 feet from the highwall toe will remain to provide a buffer area for potential rock fall and a stormwater catchment basin. The pit floor will be assessed for growth potential and topsoil/fines/amendments applied as needed prior to ripping

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and seeding with a grass/forb mix to promote site stability, dust suppression and weed control. On the eastern edges of the property above the highwall, disturbance will be regraded and reclaimed to blend with the surrounding area. This area is zoned for open-space and wildlife habitat.

**Surety Amount:** \$1,427,300

**Form:**

**Renewable Term:**

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